Space Weather Forecast

Issued on Thursday, 11 April 2024 at 13:27 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of Moderate activity from 12 Apr. Slight chance of G1 Minor geomagnetic storms on 13 and 14 Apr

Analysis of Space Weather Activity over past 24 hours.
Solar Activity: Solar activity is Low. There are five regions on the visible disc, with a region in the far northeast the most active region. A further region in the northeast is developing but is relatively small. The remaining two regions are large but relatively simple.

Two eruptions were observed leaving the north-central disc early on 11 Apr with the risk of an Earth-directed component. Imagery is still limited, but analysis will be undertaken when possible.

Solar Wind / Geomagnetic Activity: Solar wind speeds were at slightly elevated levels, around 450km/s with the Earth under the influence of a fast solar wind. Total magnetic field strength was weak, with the north-south component also varying weakly. Geomagnetic activity was Quiet to Unsettled.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary
Solar Activity: Solar activity is expected to remain mainly Low, but with an increasing chance of Moderate activity later in the period as significant returning regions rotate onto the visible disc.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs are currently forecast, with two eruptions from north-centre disc awaiting analysis. Solar wind speeds are expected to ease later on 11 and into 12 Apr as a fast solar wind wanes. A further fast solar wind is then expected to connect with Earth through 13 and 14 Apr, with speeds of 450-500km/s forecast. Geomagnetic activity is forecast to be mainly Quiet to Unsettled on 11 and 12 Apr. Unsettled to Active intervals are then possible on 13 or 14 Apr as the next high speed stream connects. Depending on the strength of the connection, there is a risk of G1/Minor Storms.

Energetic Particles / Solar Radiation: Solar radiations expected to persist at background levels during the period given the lack of appropriate active sunspot regions on the disc.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	20	20
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	10	20	30	30
Very Active	R3 to R5 X	No	1	1	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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